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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/777,007 | 02/02/2001 | Hsingya Arthur Wang | 00939A045100 | 5469 |

20350 7590 03/28/2003

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

| EXAMINER |
|---|
| ROSE, KIESHA L |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2822 | |

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/777,007 | WANG ET AL. | |
| | Examiner | Art Unit | |
| | Kiesha L. Rose | 2822 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *03 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *03 February 2003* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *12* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

## DETAILED ACTION

This Office Action is in response to the amendment filed 3 February 2003.

### *Drawings*

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 3 February 2003 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (U.S. Patent 5,468,981) in view of Gill (U.S. Patent 5,418,741) and Stewart (U.S. Patent 4,185,319).

Hsu discloses an EEPROM (Fig. 1) that contains a p-type semiconductor substrate (12), an n-type drain region (14) formed into substrate, an n-type double diffused source region (16) comprising a first sub-region (18) of a first dopant species (arsenic) with a first distance and a second sub-region (20) of a second dopant species

(phosphorous) with a second distance formed in substrate in spaced alignment with drain region with a channel region (30) therebetween, where source region has a more abrupt profile grade relative to the surface than drain region, where source and drain form a pn junction with the substrate, a floating gate electrode (24 located over channel region and having a portion over both the drain and source regions wherein a greater portion is over the source region and a control gate electrode (26) overlapping floating gate electrode. Hsu discloses all of the limitations except for word lines and bit lines. Whereas Gill discloses an EEPROM (Fig. 1A) that contains a plurality of memory cells arranged in a matrix of N-rows (word lines) and M-columns (bit lines), a plurality of floating gate transistors all containing a control gate (14), a floating gate (13), a source (12) and a drain (11), word lines (15) connect together the control gates in a common row, bit lines (17) connect the drains of the transistor in common column and means (19) connecting the source regions together. The word and bit lines are formed to connect the control gates of plurality of transistors together and the plurality of drain regions together. Since Hsu and Gill are both from the same field of endeavor, EEPROM, the purpose disclosed by Gill would have been recognized in the pertinent art of Hsu. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the EEPROM of Hsu by incorporating a bit and word line to connect the plurality of control gates and drain regions together as taught by Gill. Hsu and Gill disclose all of the limitations except for the control gate to have one voltage and the source to have another and the drain grounded. Whereas Stewart discloses a memory device (Fig. 4) that discloses that in the programming mode of the

memory device the control gate has one voltage, the source has another voltage (positive) and the drain is grounded. The control gate and source region have a positive voltage and the drain region is grounded to put the memory device in program mode. (Column 4, lines 36-46) Since Hsu, Gill and Stewart are both from the same field of endeavor, memory devices, the purpose disclosed by Stewart would have been recognized in the pertinent art of Hsu and Gill. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the devices of Hsu and Gill by incorporating the control gate and source region to have a positive voltage and the drain region to be grounded to put the memory device in program mode as taught by Stewart. In regards to claims 18 and 24-25, Hsu, Gill and Stewart disclose the claimed invention except for the first voltage to be about 8.5 volts and the second voltage to be about 4.5 volts and the first distance of the source region is 0.1 microns and the second distance is 0.3 microns. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the first voltage to be about 8.5 volts and the second voltage to be about 4.5 volts and the first distance of the source region is 0.1 microns and the second distance is 0.3 microns, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (1980).

### *Response to Arguments*

Applicant's arguments with respect to claims 6-25 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiesha L. Rose whose telephone number is 703-605-4212. The examiner can normally be reached on M-F 8:30-6:00 off 1st Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 703-305-8-4905. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

KLR
March 24, 2003

AMIR ZARABIAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800